

IN THE CLAIMS:

1-55. (Canceled)

56. (New) method of modulating the differentiation of undifferentiated, pluripotent human embryonic stem (hES) cell in culture, comprising providing a fibroblast feeder layer which has been selected based on its ability to induce differentiation of undifferentiated, pluripotent human embryonic stem (hES) cells in culture, and growing said undifferentiated, pluripotent human embryonic stem (hES) cells on said fibroblast feeder layer, wherein said fibroblast feeder layer modulates the differentiation of said undifferentiated, pluripotent human embryonic stem (hES) cell in culture.

57. (New) A method to of modulating the differentiation of undifferentiated, pluripotent human embryonic stem (hES) cell in culture, comprising providing a fibroblast feeder layer which has been selected based on its ability to favour differentiation of the hES cell into a somatic lineage or into an extraembryonic lineage, and growing said undifferentiated, pluripotent human embryonic stem (hES) cells on said fibroblast feeder layer, wherein said fibroblast feeder layer modulates the differentiation of said undifferentiated, pluripotent human embryonic stem (hES) cell in culture.

58. (New) A method of modulating the differentiation of undifferentiated, pluripotent human embryonic stem (hES) cell in culture, comprising providing a fibroblast feeder layer which has been selected based on its ability to favour differentiation into a somatic lineage and to limit differentiation into an extraembryonic lineage, and growing said undifferentiated, pluripotent human embryonic stem (hES) cells on said fibroblast feeder layer, wherein said fibroblast feeder layer modulates the differentiation of said undifferentiated, pluripotent human embryonic stem (hES) cell in culture.

59. (New) A method of modulating the differentiation of undifferentiated, pluripotent human embryonic stem (hES) cell in culture, comprising providing a fibroblast feeder layer which has been selected based on its ability to induce the differentiation of the hES cell into a somatic

lineage or multiple somatic lineages, and growing said undifferentiated, pluripotent human embryonic stem (hES) cells on said fibroblast feeder layer, wherein said fibroblast feeder layer modulates the differentiation of said undifferentiated, pluripotent human embryonic stem (hES) cell in culture.

60. (New) A method according to any one of claims 56-59, further comprising cultivating the hES cells for prolonged periods and/or at high density.

61. (New) A method according to any one of claims 56-59, wherein the fibroblast feeder layer is a mouse and/or human fibroblast feeder layer.

62. (New) A method according to any one of claims 56-59, wherein said fibroblast feeder layer comprises embryonic fibroblasts.

63. (New) A method according to any one of claims 56-59, wherein the undifferentiated, pluripotent hES cells are prepared by a process comprising:

- obtaining an *in vitro* fertilised human embryo and growing said embryo to a blastocyst stage of development;

- removing inner cells mass (ICM) cells from said embryo;

- culturing said ICM cells on the fibroblast feeder layer; and

- recovering the ICM cells from the feeder layer as hES cells.